Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

Southeast Regional Office • 20 Riverside Drive, Lakeville MA 02347 • 508-946-2700

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Commissioner

June 27, 2016

Mr. James Dunlop
Universal Wilde Inc.
26 Dartmouth Street
Westwood, MA 02090

RE: NORWOOD
Transmittal No.: X267605
Application No.: SE-16-003
Class: *SM80-7*
FMF No.: 573793
AIR QUALITY PLAN APPROVAL

Dear Mr. Dunlop:

The Massachusetts Department of Environmental Protection ("MassDEP"), Bureau of Air and Waste, has reviewed your Non-major Comprehensive Plan Application ("Application") listed above. The Application concerns the proposed construction and operation at your printing located at 675 Canton Street in Norwood, Massachusetts ("Facility"). The Application bears the seal and signature of Gary W. Siegel, Massachusetts Registered Professional Engineer Number 36279.

The Application was submitted in accordance with 310 CMR 7.02 Plan Approval and Emission Limitations as contained in 310 CMR 7.00 "Air Pollution Control" regulations adopted by MassDEP pursuant to the authority granted by Massachusetts General Laws, Chapter 111, Section 142 A-N, Chapter 21C, Section 4 and 6, and Chapter 21E, Section 6. MassDEP's review of your Application has been limited to air pollution control regulation compliance and does not relieve you of the obligation to comply with any other regulatory requirements.

MassDEP has determined that the Application is administratively and technically complete and that the Application is in conformance with the Air Pollution Control regulations and current air pollution control engineering practice, and hereby grants this **Plan Approval** for said Application, as submitted, subject to the conditions listed below.

Please review the entire Plan Approval, as it stipulates the conditions with which the Facility owner/operator ("Permittee") must comply in order for the Facility to be operated in compliance with this Plan Approval.

1. DESCRIPTION OF FACILITY AND APPLICATION

Universal Wilde, Inc. ("The Permittee") operates offset lithographic printing equipment located at 675 Canton Street in Norwood, Massachusetts ("The Facility"). Previously, the Permittee was operating a facility located in Somerville, Massachusetts, which will be closed permanently. The Permittee is also relocating a heatset web offset press from its existing Rockland, Massachusetts facility.

The Facility manufactures general commercial printed products such as magazine inserts, business forms, catalogs, posters, charts, financial documents, advertising brochures and information leaflets. The process requires several distinct steps involving pre-press, plate preparation, and folding and binding. The manufacturing of the printed products is performed on a batch basis, as specified by the customer. The Facility operates 24 hours per day, 7 days per week, and 52 weeks per year.

The Facility houses two heatset web offset presses, a Goss M300 (EU-1) and a Man Roland Rotoman N (EU-2). EU-1 was previously housed at the Rockland facility and is equipped with a Regenerative Thermal Oxidizer, which provides a minimum destruction efficiency of 98 percent by weight of the volatile organic compounds (VOC) and hazardous air pollutants (HAPs). EU-2 was previously housed at the Somerville facility and is equipped with an integral, gas-fired dryer and Recuperative Thermal Oxidizer, which provides a minimum destruction efficiency of 98 percent by weight of VOC and HAPs.

EU-1 and EU-2 utilize petroleum distillate oil based heatset inks, which dry the inks by evaporation. Fountain solution concentrate used on the presses contains inorganic compounds and glycol ethers to decrease the surface tension of the solution. EU-1 utilizes manual blanket washing and EU-2 utilizes both automatic and manual blanket washing systems. For manual blanket washing, the blanket washes are applied with shop towels. Solvent laden shop towels are stored in closed containers when not being used.

In addition to the heatset presses, the Permittee is relocating a nonheatset web press, a Goss Community Press from its Rockland facility. The nonheatset web press meets the criteria of the MassDEP's Environmental Results Program and has applicable requirements under 310 CMR 7.26(20) through (29). The Facility also operates three (3) small ink jet printers, which do not have any applicable requirements since they are cartridge-based and similar to those used by consumer home-based ink jet printers.

The Facility operates several combustion units (space heaters) that utilize natural gas. Each of these units has a heat input capacity of less than 10 Million British Thermal Unit per hour (MMBtu/hr) and are therefore exempt in accordance with 310 CMR 7.02(2)(b)15.

Best Available Control Technology (BACT) for this application is defined in Table 2, Table 2a, and Table 2b. In addition, the Permittee shall utilize best management practices involving storage and dispensing of VOC containing materials.

2. EMISSION UNIT IDENTIFICATION

Each Emission Unit ("EU") identified in Table 1 is subject to and regulated by this Plan Approval:

Table 1

EU	Description	Design Capacity	Pollution Control Device (PCD)
EU-1	Goss M300 Heatset Web Press	31,600 impressions per hour 1,000 feet per minute	PCD-1 Regenerative Thermal Oxidizer Manufacturer: The CMM Group, LLC Model No.: RTO-6000-M-95-SC Burner: Eclipse TJ0150
EU-2	Man Roland Rotoman N Heatset Web Press	48,000 impressions per hour 1,600 feet per minute	PCD-2 Recuperative Thermal Oxidizer (Dryer with Integrated Oxidizer) Manufacturer: Megtec Systems Model No.: DDTNV-119-1066

Table 1 Key:

EU = Emission Unit
No. = Number

3. APPLICABLE REQUIREMENTS

A. OPERATIONAL, PRODUCTION and EMISSION LIMITS

The Permittee is subject to, and shall not exceed the Operational, Production, and Emission Limits as contained in Table 2:

Table 2

EU	Operational/ Production Limit	Air Contaminant	Emission Limit[(1)]
EU-1	PCD-1 Min. combustion chamber temperature: 1,500°F[(2)] Min. residence time: 0.4 seconds[(3)] Min. control efficiency by weight: 98% Total volume of all incidental cleaning materials shall not exceed 55 gallons annually	VOC	≤ 1.71pounds/hour[(4)] ≤ 2 tons/month ≤ 7.5 tons/year
		Total HAPs	≤ 0.91 pounds/hour[(4)] ≤ 2 ton/month ≤ 4 tons/year
EU-2	PCD-2 Min. combustion chamber temperature: 1,400°F[(2)] Min. residence time: 0.6 seconds[(3)] Min. control efficiency by weight: 98% Total volume of all incidental cleaning materials shall not exceed 55 gallons annually	VOC	≤ 1.71 pounds/hour[(4)] ≤ 2 tons/month ≤ 7.5 tons/year
		Total HAPs	≤ 0.91 pounds/hour[(4)] ≤ 2 ton/month ≤ 4 tons/year

Table 2 Key:

EU	= Emission Unit	°F	= degrees Fahrenheit
Min.	= minimum	N/A	= Not Applicable
/	= per	%	= percent
≤	= less than or equal to	PCD	= Pollution Control Device
Total HAPs	= Total Hazardous Air Pollutants		
Annually	= 12-month rolling period		
MassDEP	= Massachusetts Department of Environmental Protection		

Table 2 Notes:

1. The Permittee shall limit the use of materials containing VOCs and HAPs in accordance with Appendix A, which represents an alternative to the limitations when operational or production limitations on a source are not feasible due to production or materials variability. The limitations consist of emission formulas, which when implemented, preserve the practical enforceability requirement necessary in limiting a facility's potential to emit. These emission formulas contain established emission information that can easily be verified. Additionally, these formulas set out the methodology by which emissions from various process materials will be determined. These formulas determine emissions in a replicable manner by relating the pollutant species and the associated emissions. Accordingly, the Permittee shall not exceed total VOC, and aggregate HAP as identified in Table 2 of this approval. Compliance with the operational limitations shall be calculated in accordance with the methodology outlined in Appendix A of this approval.
2. Minimum temperature as measured by thermocouple located on the downstream end of the combustion chamber, or any other temperature as may be established pursuant to satisfactory compliance testing results as determined by MassDEP.
3. Minimum residence time shall be met under all operating conditions for the effective chamber volume of the oxidizer.
4. Pound per hour emission limit is for stack test purposes only. PCD-1 and PCD-2 shall provide a minimum VOC control efficiency of 98% by weight or a maximum outlet stack emission rate not to exceed pound per hour emissions of VOC and HAPs specified herein, whichever is least stringent.
5. The Permittee shall ensure that the minimum capture, destruction and overall VOC and HAPs control efficiencies for inks, fountain solution and blanket wash on EU-1 and EU-2 are contained in Table 2a. below.

Table 2a.: Capture, Destruction and Overall Control Efficiencies

Materials	EU-1 and EU-2		
	Capture	Destruction	Overall
Inks	100%[(6)]	98%	98%
Fountain Solution	70%	98%	68.6%
Blanket Wash (Automatic)	40%	98%	39.2%

Table 2a Key:

% = percent
EU = Emission unit

6. Of the VOC applied to the web, 20% by weight is retained on the web and the remainder is captured and controlled.

Table 2 Notes (continued):

7. The Permittee shall utilize as applied inks, fountain solution and cleaning solutions that meet the requirements contained in Table 2b. below.

Table 2b.: VOC limitations for each Heatset Offset Web Press

Product Formulation	Maximum VOC Content
Inks	≤ 45% by weight
Fountain Solution	≤ 5% by weight
Cleaning Solutions	≤ 30% by weight or VOC composite pressure ≤ 10 mmHg @ 20°C (68°F)

Table 2b Key:

%	= percent	EU	= Emission unit
≤	= less than or equal to	VOC	= Volatile Organic Compounds
mmHg	= millimeter Mercury	@	= at
°C	= degrees Celsius	°F	= degrees Fahrenheit

B. COMPLIANCE DEMONSTRATION

The Permittee is subject to, and shall comply with, the monitoring, testing, record keeping, and reporting requirements as contained in Tables 3, 4, and 5:

Table 3

EU	Monitoring and Testing Requirements
EU-1 EU-2	1. The Permitee shall monitor the VOC-containing and HAPs-containing materials used during each month, the VOC and HAPs content of each material, and the actual emissions of VOC and HAPs for each month, as well as for the prior 11 months.
	2. The Permittee shall monitor operations so that the minimum combustion chamber temperature for each PCD as indicated in Table 2 of this Plan Approval, or such other temperature as may have been established pursuant to satisfactory compliance testing results as determined by MassDEP, is achieved prior to start-up of any associated emission unit, and this minimum temperature is maintained at all times while the emission unit is in operation. Temperature monitoring shall include date and time and any necessary description of operational changes that may occur.
	3. The Permittee shall monitor and record combustion chamber temperature (measured in °F) of the thermal oxidizers on a continuous basis by thermocouples located at the downstream end of the combustion chamber.

Table 3 (continued)

EU	Monitoring and Testing Requirements
EU-1 EU-2	4. The Permittee shall demonstrate to MassDEP that the thermal oxidizer operates at a minimum overall control efficiency of 98% for each EU-1 and EU-2. Compliance testing on emissions shall be performed within 60 days after achieving maximum production rate or no later than 180 days after the date of this Plan Approval. All compliance testing shall be conducted in accordance with the test methods and procedures set forth in 40 CFR Part 60, Appendix A; 310 CMR 7.00, Section 7.13; and this Plan Approval. The dates and times for conducting the emission compliance test shall be coordinated with MassDEP personnel of this office for a mutually agreed upon schedule for testing.
	5. The Permittee shall submit a written test protocol to this office, attention Bureau of Air and Waste Permit Chief, for review and approval, at least thirty (30) days prior to the commencement of any compliance testing. This test protocol shall describe the test methodologies to be employed during the required compliance testing.
	6. The Permittee shall submit a final compliance test results report to this office within sixty (60) days of completion of any required compliance testing.
	7. The Permittee shall monitor all maintenance activities associated with each PCD.
Facility-wide	8. The Permittee shall monitor all operations to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration.
	9. The Permitee shall perform Emissions Compliance (Stack Testing), in accordance with 310 CMR 7.13, or any other testing if and when requested by the MassDEP or USEPA using methods under 40 CFR 60, Appendix A and/or other methods approved in a pre-test protocol by the MassDEP or USEPA.
	10. At least 30 days prior to emission testing, the Permittee shall submit to MassDEP for approval a stack emission pretest protocol.
	11. Within 60 days after emission testing, the Permittee shall submit to MassDEP a final stack emission test results report.

Table 3 Key:

EU	= Emission Unit
PCD	= Pollution Control Device
VOC	= Volatile Organic Compounds
HAPs	= Hazardous Air Pollutants
MassDEP	= Massachusetts Department of Environmental Protection
°F	= degrees Fahrenheit
%	= weight percent
CFR	= Code of Federal Regulation
CMR	= Code of Massachusetts Regulation
USEPA	= United States Environmental Protection Agency

Table 4	
EU	**Record Keeping Requirements**
EU-1 EU-2	1. The Permittee shall maintain records on a monthly basis and on a consecutive 12-month period (the total from the latest month plus the sum for the eleven months preceding the latest month). The Permittee shall consolidate all the monthly purchase records provided by the different ink vendors to a legible recordkeeping format of the VOC- and/or HAPs-containing materials used during each month, the VOC and HAPs content of each material, and the actual emissions of VOC and HAPs for each month, as well as for the prior 11 months.
	2. The Permittee shall maintain records on all materials used in the pressroom activity on a monthly basis and on a consecutive 12-month period (the total from the latest month plus the sum for the eleven months preceding the latest month). The actual emissions of VOC and HAPs from the materials shall be included in the emission limits for each EU.
	3. The Permittee shall maintain records documenting the combustion chamber temperature (as measured in °F), or such other temperature as may have been established pursuant to satisfactory compliance testing results as determined by MassDEP. Temperature monitoring shall include the date and time and any necessary description of operational changes that may occur.
	4. The Permittee shall utilize and maintain a stand-alone digital data logger to record the combustion chamber temperature for each emission unit. The frequency of data record shall be a minimum of every 15 minutes.
Facility-wide	5. The Permittee shall maintain records of the total volume of all incidental cleaners so as not to exceed 55 gallons on a 12-month rolling period.
	6. The Permittee shall maintain adequate records on-site to demonstrate compliance status with all operational, production, and emission limits contained in Table 2 above. Records shall also include the actual emissions of air contaminant(s) emitted for each calendar month and for each consecutive twelve-month period (current month plus prior eleven months). These records shall be compiled no later than the 15th day following each month. An electronic version of the MassDEP approved record keeping form, in Microsoft Excel format, can be downloaded at http://www.mass.gov/eea/agencies/massdep/air/approvals/limited-emissions-record-keeping-and-reporting.html#WorkbookforReportingOn-SiteRecordKeeping.
	7. The Permittee shall maintain records of monitoring and testing as required by Table 3.
	8. The Permittee shall maintain a copy of this Plan Approval, underlying Application and the most up-to-date SOMP for the EU(s) and PCD(s) approved herein on-site.
	9. The Permittee shall maintain a record of routine maintenance activities performed on the approved EU(s), PCD(s) and monitoring equipment. The records shall include, at a minimum, the type or a description of the maintenance performed and the date and time the work was completed.

Table 4 (continued)	
EU	**Record Keeping Requirements**
Facility-wide	10. The Permittee shall maintain a record of all malfunctions affecting air contaminant emission rates on the approved EU(s), PCD(s) and monitoring equipment. At a minimum, the records shall include: date and time the malfunction occurred; description of the malfunction; corrective actions taken; the date and time corrective actions were initiated and completed; and the date and time emission rates and monitoring equipment returned to compliant operation.
	11. The Permittee shall maintain records to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration.
	12. The Permittee shall maintain records required by this Plan Approval on-site for a minimum of five (5) years.
	13. The Permittee shall make records required by this Plan Approval available to MassDEP and USEPA personnel upon request.

Table 4 Key:

EU	= Emission Unit
VOC	= Volatile Organic Compounds
HAPs	= Hazardous Air Pollutants
PCD	= Pollution Control Device
MassDEP	= Massachusetts Department of Environmental Protection
°F	= degrees Fahrenheit
%	= weight percent
SOMP	= Standard Operating Maintenance and Procedures
CFR	= Code of Federal Regulation
CMR	= Code of Massachusetts Regulation
USEPA	= United States Environmental Protection Agency

Table 5	
EU	**Reporting Requirements**
EU-1 EU-2	1. The Permittee shall submit a written test protocol to this office, attention Bureau of Air and Waste Permit Chief, for review and approval, at least thirty (30) days prior to the commencement of any compliance testing. This test protocol shall describe the test methodologies to be employed during the required compliance testing.
	2. The Permittee shall submit a final compliance test results report to this office within sixty (60) days of completion of any required compliance testing.

Table 5 (continued)	
EU	**Reporting Requirements**
Facility-wide	3. The Permittee shall submit to MassDEP all information required by this Plan Approval over the signature of a "Responsible Official" as defined in 310 CMR 7.00 and shall include the Certification statement as provided in 310 CMR 7.01(2)(c).
	4. The Permittee shall notify the Southeast Regional Office of MassDEP, Bureau of Air and Waste Compliance & Enforcement Chief by telephone: 508-946-2817, or fax : 508-946-6557, as soon as possible, but no later than three (3) business day after discovery of an exceedance(s) of Table 2 requirements. A written report shall be submitted to Compliance & Enforcement Chief at MassDEP within ten (10) business days thereafter and shall include: identification of exceedance(s), duration of exceedance(s), reason for the exceedance(s), corrective actions taken, and action plan to prevent future exceedance(s).
	5. The Permittee shall accurately report the Facility's air emissions on Source Registration/Emission Statement Forms in accordance with 310 CMR 7.12.
	6. The Permittee shall provide a copy to MassDEP of any record required to be maintained by this Plan Approval within thirty (30) days from MassDEP's request.

Table 5 Key:

EU = Emission Unit
MassDEP = Massachusetts Department of Environmental Protection
CMR = Code of Massachusetts Regulation

4. SPECIAL TERMS AND CONDITIONS

A. The Permittee is subject to, and shall comply with, the Special Terms and Conditions as contained in Table 6 below:

Table 6	
EU	**Special Terms and Conditions**
EU-1 EU-2	1. The Permittee shall utilize natural gas as their only fuel of use for each thermal oxidizer.
	2. The Permittee shall maintain monthly and annual recordkeeping of the ink consumption. This record shall be kept in a complete and accurate fashion at all times and shall be available for MassDEP inspections. The Permittee may reconcile VOC and/or HAPs contained in any ink with the purchase record issued by the vendor when determining monthly emissions.

Table 6 (continued)

EU	Special Terms and Conditions
EU-1 EU-2	3. The Permittee shall maintain the Safety Data Sheet (SDS) for each compound utilized at the facility. Such record must be made available to MassDEP personnel upon request.
	4. The Permittee shall utilize only alcohol substitutes in the heatset web offset presses. The Permittee shall ensure that the VOC concentration of the as-applied fountain solution shall be less than 5% by weight.
	5. The Permittee shall ensure that the safety interlocks between the dryer and oxidizer prevents the press and oxidizer from operating if the proper negative air pressure flow from the dryer is not achieved and maintained during the course of a production run.
	6. The start-up specifications and maintenance procedures for each PCD shall be incorporated into its SOMP. In addition, a copy of any subsequent revisions made to the SOMP must be submitted to this office within seven (7) days of the modification(s).
Facility-wide	7. The Permittee shall ensure that all VOC and HAPs-containing materials, such as coatings, solvents, and cleanup solutions, are received and dispensed in closed containers.
	8. The Permittee shall ensure that all shop towels used in conjunction with the cleaning solutions are placed in non-leaking covered containers when not in use, and are collected for proper recycling or disposal.
	9. The Permittee shall ensure that sound impacts from the subject facility shall not exceed 10 dB(A) above background at the property line and shall not cause puretone conditions as defined in the Division of Air Quality Control Noise Policy No. 90-001 (copy attached).
	10. In accordance with 310 CMR 7.26(22), the Permittee shall monitor that the total volume of all incidental cleaners is limited to no more than 55 gallons on a 12-month rolling period.

Table 6 Key:

EU	= Emission Unit
MassDEP	= Massachusetts Department of Environmental Protection
VOC	= Volatile Organic Compound
HAP	= Hazardous Air Pollutant
%	= percent
dB(A)	= an expression of the relative loudness of sounds in air as perceived by the human ear
No.	= number
SOMP	= Standard Operating and Maintenance Procedure
PCD	= Pollution Control Device
CMR	= Code of Massachusetts Regulations

B. The Permittee shall install and use an exhaust stack, as required in Table 7, on each of the Emission Units that is consistent with good air pollution control engineering practice and that discharges so as to not cause or contribute to a condition of air pollution. Each exhaust stack shall be configured to discharge the gases vertically and shall not be equipped with any part or device that restricts the vertical exhaust flow of the emitted gases, including, but not limited to, rain protection devices known as "shanty caps" and "egg beaters."

C. The Permittee shall install and utilize exhaust stacks with the following parameters, as contained in Table 7, for the Emission Units that are regulated by this Plan Approval:

Table 7

EU	Stack Height Above Ground (feet)	Stack Exit Diameter (feet)	Stack Gas Exit Velocity Range (feet per second)	Stack Gas Exit Temperature Range (^{o}F)	Stack Liner Material
EU-1	42	1.75	27.6	550 – 600	Carbon Steel
EU-2	46	1.83	29	550 - 600	Stainless Steel

Table 7 Key:

EU = Emission Unit
°F = degrees Fahrenheit

5. GENERAL CONDITIONS

The Permittee is subject to, and shall comply with, the following general conditions:

A. Pursuant to 310 CMR 7.01, 7.02, 7.09 and 7.10, should any nuisance condition(s), including but not limited to smoke, dust, odor or noise, occur as the result of the operation of the Facility, then the Permittee shall immediately take appropriate steps including shutdown, if necessary, to abate said nuisance condition(s).

B. If asbestos remediation/removal will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that all removal/remediation of asbestos shall be done in accordance with 310 CMR 7.15 in its entirety and 310 CMR 4.00.

C. If construction or demolition of an industrial, commercial or institutional building will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that said construction or demolition shall be done in accordance with 310 CMR 7.09(2) and 310 CMR 4.00.

D. Pursuant to 310 CMR 7.01(2)(b) and 7.02(7)(b), the Permittee shall allow MassDEP and / or USEPA personnel access to the Facility, buildings, and all pertinent records for the purpose of making inspections and surveys, collecting samples, obtaining data, and reviewing records.

E. This Plan Approval does not negate the responsibility of the Permittee to comply with any other applicable Federal, State, or local regulations now or in the future.

F. Should there be any differences between the Application and this Plan Approval, the Plan Approval shall govern.

G. Pursuant to 310 CMR 7.02(3)(k), MassDEP may revoke this Plan Approval if the construction work is not commenced within two years from the date of issuance of this Plan Approval, or if the construction work is suspended for one year or more.

H. This Plan Approval may be suspended, modified, or revoked by MassDEP if MassDEP determines that any condition or part of this Plan Approval is being violated.

I. This Plan Approval may be modified or amended when in the opinion of MassDEP such is necessary or appropriate to clarify the Plan Approval conditions or after consideration of a written request by the Permittee to amend the Plan Approval conditions.

J. Pursuant to 310 CMR 7.01(3) and 7.02(3)(f), the Permittee shall comply with all conditions contained in this Plan Approval. Should there be any differences between provisions contained in the General Conditions and provisions contained elsewhere in the Plan Approval, the latter shall govern.

6. MASSACHUSETTS ENVIRONMENTAL POLICY ACT

MassDEP has determined that the filing of an Environmental Notification Form (ENF) with the Secretary of Energy & Environmental Affairs, for air quality control purposes, was not required prior to this action by MassDEP. Notwithstanding this determination, the Massachusetts Environmental Policy Act (MEPA) and 301 CMR 11.00, Section 11.04, provide certain "Fail-Safe Provisions," which allow the Secretary to require the filing of an ENF and/or an Environmental Impact Report (EIR) at a later time.

7. APPEAL PROCESS

This Plan Approval is an action of MassDEP. If you are aggrieved by this action, you may request an adjudicatory hearing. A request for a hearing must be made in writing and postmarked within twenty-one (21) days of the date of issuance of this Plan Approval.

Under 310 CMR 1.01(6)(b), the request must state clearly and concisely the facts, which are the grounds for the request, and the relief sought. Additionally, the request must state why the Plan Approval is not consistent with applicable laws and regulations.

The hearing request along with a valid check payable to the Commonwealth of Massachusetts in the amount of one hundred dollars ($100.00) must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
P.O. Box 4062
Boston, MA 02211

This request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority.

MassDEP may waive the adjudicatory hearing-filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request as provided above, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

Enclosed is a stamped approved copy of the application submittal.

Should you have any questions concerning this Plan Approval, please contact Elza Bystrom by telephone at 508-946-2856, or in writing at the letterhead address.

Sincerely,

_____

Thomas Cushing
Permit Chief
Bureau of Air and Waste

Enclosure

ecc: Norwood Board of Health
Norwood Fire Department
MassDEP/Boston – Y. Tian
MassDEP/SERO – M. Pinaud, P. Russell
Printing Industries of America – G. Jones
Printing Industries of New England – T. Parker

Appendix A

FACILITY WIDE OPERATIONAL & EMISSION LIMITATION CALCULATIONS

To determine compliance with the Facility-wide annual emissions limit, VOC emissions shall be calculated using the following formulas:

Equation 1

$$E_M = E_1 + E_2 + E_3 + E_4$$

Where:

E_M = Total VOC Emissions (tons/month) as summed from VOC emissions for individual materials (e.g., ink, fountain solution, etc.)

Equation 2[(a)]

$$E_n = U_n \times V_n \times \left(\frac{1 - R_n}{100}\right) \times \left\{1 - \left(\frac{\eta_n}{100}\right) \times \left(\frac{\xi}{100}\right)\right\}$$

Where:

E_n = VOC emissions from individual material
U_n = Total usage of the individual material
V_n = Actual VOC content averaged over the collection period, e.g., 30 days
ξ = Control Device Efficiency (98% or 99%)
R_n = Amount of VOC retained and not emitted
η = Capture efficiency for individual material emitted

Ink (n = 1):

E_1 = Ink VOC Emissions (tons/month)
U_1 = Ink Usage (tons/month)
V_1 = Weighted Average Ink VOC Content (wt%)[(b)]
R_1 = Ink VOC Retained in paper (20% for heatset and 95% for nonheatset web)[(c)(d)]
η_1 = Ink VOC Capture efficiency (100%)[(c)]

Fountain Solution (n = 2):

E_2 = Fountain Solution VOC Emissions (tons/month)
U_2 = Fountain Solution Usage (tons/month)
V_2 = Weighted Average Fountain Solution VOC Content (wt%)[(b)]
R_2 = Fountain Solution VOC Retained in paper (0%)[(c)]
η_2 = Fountain Solution VOC Capture efficiency (70% for heatset, 0% for nonheatset)[(c)(f)]

Manual Cleaning Solvent (Blanket and Roller Wash) (n = 3):

E_3 = Manual Cleaning Solvent VOC Emissions (tons/month)
U_3 = Manual Cleaning Solvent Usage (tons/month)
V_3 = Weighted Average Manual Cleaning Solvent VOC Content (wt%)[b]
R_3 = Manual Cleaning Solvent VOC Retained in Shop Towels (50%)[c][g]
η_{13} = Manual Cleaning Solvent Capture efficiency (0%)

Automatic Cleaning Solvent (Blanket Wash) (Lithography) (n = 4):

E_4 = Automatic Cleaning Solvent VOC Emissions (tons/month)
U_4 = Automatic Cleaning Solvent Usage (tons/month)
V_4 = Weighted Average Automatic Cleaning Solvent VOC Content (wt%)[b]
R_4 = Automatic Cleaning Solvent VOC Retained (0%)[c][h]
η_{14} = Automatic Cleaning Solvent VOC Capture efficiency (40% for heatset, 0% for nonheatset)

Miscellaneous Press Chemistry (Plate Cleaner, Spray Adhesive, etc.) (n = 5):

E_5 = Miscellaneous VOC Emissions (tons/month)
U_5 = Miscellaneous Usage (tons/month)
V_5 = Weighted Average Miscellaneous VOC Content (wt%)[b]
R_5 = Miscellaneous VOC Retained in Shop Towels (50%)[c][g]
η_{15} = Miscellaneous VOC Capture efficiency (0%)[c]

Prepress Chemistry (Developer, Finisher, etc.) (n = 6):

E_6 = Prepress Chemistry VOC Emissions (tons/month)
U_6 = Prepress Chemistry Usage (tons/month)
V_6 = Weighted Average Prepress VOC Content (wt%)[b]
R_6 = Prepress Chemistry VOC Retained in Shop Towels (0%)[c][g]
η_{16} = Prepress Chemistry VOC Capture efficiency (0%)[c]

Equation 3

$$E_A = EM_1 + EM_2 + EM_3 + EM_4 + EM_5 + EM_6 + EM_7 + EM_8 + EM_9 + EM_{10} + EM_{11} + EM_{12}$$

Where:

E_A = Total VOC emissions (tons per year) for the previous 12 months
$EM_{1 \text{ thru } 12}$ = Total VOC emissions per month (tons/month)

For each month, the facility shall record materials usage and VOC content, and calculate VOC emissions, to establish the monthly and rolling 12-month summations of total emissions.

Notes:

a. For purposes of simplicity, the emissions from each of the process materials (E_n) are shown as being based on the total usage (U_n) and average VOC content (V_n) of the material, when in fact, the total VOC consumption would be based on the sum of the usage and actual VOC contents of each of the (potentially) multiple materials used as in:

$$C_n = \sum_{j=1}^{m} U_{nj} \times V_{nj}$$

Where C_n = total VOC consumption of a category of material n (i.e., ink) and j represents each of the various materials within n.

Additionally, the capture and control efficiency for all pollution control devices is assumed to be equal. For a facility with multiple control devices, it is possible that various presses would have differing control device efficiencies, such that:

$$E_n = \sum_{k=1}^{p} C_{nk} \times \left(\frac{1 - R_n}{100}\right) \times \left\{1 - \left(\frac{\eta_n}{100}\right) \times \left(\frac{\xi_k}{100}\right)\right\}$$

Where k represents each of the product of an individual capture and control device pair.

b. Based on Alternative Control Techniques Document (EPA 453/R-94-054) and Control Techniques Document for Offset Lithography (EPA-453/R-06-002).
c. Includes all paste inks and varnishes formulated with low volatility ink oils (e.g., Magee Oil).
d. Records of fountain solution concentrate will provide more accurate VOC content and usage figures than press-ready fountain solution data.
e. Records of fountain solution concentrate will provide more accurate VOC content and usage figures than press-ready fountain solution data.
f. Assumes the use of low-volatility alcohol substitutes such as selected glycol ethers or ethylene glycol.
g. Based on the use of low-volatility cleaning solvents (vapor pressure less than or equal to 10 mm Hg at 20°C) and storage of used shop towels containing cleaning solvents in covered containers.
h. Based on the use of low-volatility cleaning solvents (vapor pressure less than or equal to 10 mm Hg at 20°C).